Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Title V draft permit No. V-99-057
WACKER POLYMER SYSTEMS, L.P. SPRAY DRY PLANT
CALVERT CITY, KY.
June 6, 2000
JILL BERTELSON, REVIEWER
Plant I.D. # 21-157-00050 (existing ID # 072-2600-0050)
Application Log # F906

SOURCE DESCRIPTION:
The Spray Dry Plant consists of 2 process lines, constructed in 1987 and 1995, which produce a dried emulsion product. The dried emulsion is made by mixing wet emulsion from the Air Products Emulsion Plant, PVOH from the Air Products PVOH Plant, water and some additives batch-wise in tanks then continuously feeding the solution into the Spray Dry Tower which dries the solution to a powder. The spray dried powder is mixed with a clay filler and processed through a product-recovery baghouse, product filter, screener, and silo before being bagged. Both lines have identical equipment except that the second process line has 2 recycle bins—one for recycled product and one for additives.

Pollutants that are emitted from this source are methanol and vinyl acetate, which are VOCs and HAPs, and particulate.

COMMENTS:
The first process line was compliance tested on May 19, 1988 and showed emissions of particulate and VOC were below permit limits and PSD significance levels.

Previous permit actions include permits C-86-187, C-86-187 (Rev 1), S-95-053, and NPRs dated 2-17-94 and 11-9-98.

The Spray Dry Plant was part of Air Products and Chemicals, Inc. (21-157-00009) and ownership was transferred to Wacker in 1998.

With this permit the source is removing the Product Cyclones from operation and using only the Main Bag Filters for product recovery. The source is also discontinuing acrylic-formula production in both process lines.

Types of control and efficiencies
The Main Bag Filter is a baghouse which is used for product recovery and is not considered a control device. The product bag filter, product screener, oversized-product "superbag," product silo, and bagging machine all directly or indirectly exhaust to the Main Bag Filter.

The clay and recycled-product bins have vacuum-pull fabric hoods which collect the particulate and return it to the bins. These bins are located in one area inside each Spray Dry building and the "stacks" are 2 vents in each building. The areas have ACGIH and OSHA exposure limits of 10 mg/m^3 and 15 mg/m^3, respectively, which have been met during past Industrial Hygiene monitoring.

There are no controls for VOC or HAPs.

Emission factors source:

Tanks:	Plantware modeling of batch operations for VOCs/HAPs
Main Bag Filter:	Efficiency of Gore-Tex bags as tested and guaranteed by manufacturer, particle distribution tests by source for particulate; Material balance of organics in PVOH and emulsion with the assumption that all organics are emitted in the Spray Dry Tower for conservative estimates of VOCs/HAPs
Clay/Recycle bins:	Conversion of 10 mg/m^3 exposure limit to a lb/hr emission rate through the combined vents for each Spray Dry building for particulate

Applicable regulations

401 KAR 59:010, New Process Operations, applies to opacity and particulate emissions from the Main Bag Filters B84 and C23 and from the Clay Bins and the Product Recycle Bins.

Recordkeeping requirements in 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (incorporated by reference in 401 KAR 60:005), apply to the tanks since the VOL in the tanks has a max true vapor pressure less than 15 kPa per 40 CFR 60.110b (c).

Emission point numbers and description

Source emission point numbers are the same as they were when the plant was owned by Air Products except that:

1) the bagging machines emission points have been removed since all bagging machine emissions are routed to the Main Bag Filter B84 or C23.
2) emission point numbers that were individually assigned for the Line #1 Clay Bin and Recycle Bins have been changed to combine all bins for a process line into one emission point. B88 has been changed to the Line #1combined Clay/Recycle Bins emission point, while B89 has been changed to the Line #2combined Clay/Recycle Bins. B90 is no longer used as an emission point.

Emission points have been renumbered in I-steps to the source numbers.

EMISSION AND OPERATING CAPS DESCRIPTION:

Not Applicable

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.